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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,227	11/17/2003	Zhiping Yin	3657.5US (98-0265.05/US)	5021
24247	7590	09/10/2004	EXAMINER	
TRASK BRITT			LEWIS, MONICA	
P.O. BOX 2550			ART UNIT	PAPER NUMBER
SALT LAKE CITY, UT 84110			2822	

DATE MAILED: 09/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/715,227	Applicant(s) YIN, ZHIPING	
	Examiner Monica Lewis	Art Unit 2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/17/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the application filed November 17, 2003.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
3. The disclosure is objected to because of the following informalities: a) the Applicant has stated that (29) in figure 7 are "features" (For Example: See Page 12 Paragraph 40). It is not clear what "features" are as disclosed in the specification.

Appropriate correction is required.

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Applicant discloses the following in the claims however the limitations are not present in the specification: a) 1 ¼ in-film particles or surface roughness features per square millimeter of surface area (See Claims 1 and 8); and b) times the sum of x, y, and z (See Claims 4 and 11). Correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-12 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear what is meant by the following: a) "1 ¼ in-film particles" (See Claims 1 and 8); b) "roughness features per square millimeter of surface area" (See Claims 1); c) "roughness features of at least 120 nanometers size per square millimeter of

Art Unit: 2822

surface area" (See Claim 8); d) "measurable particulates" (See Claims 5 and 12); and e) times the sum of x, y, and z (this is not disclosed in the specification page 10 paragraph 34)(See Claims 4 and 11). Claims 2, 3, 6, 7, 9, 10 and 14 depend directly or indirectly from a rejected claim and are, therefore, also rejected under 35 U.S.C. 112, second paragraph for the reasons set above.

Claim Objections

7. Claim 8 is objected to because of the following informalities: a) it appears that "nonometers" is a spelling error. Appropriate correction is required.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-12 and 14, as far as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art.

In regards to claim 1, Applicant's Prior Art discloses the following:

a) a first layer (42) comprising anti-reflective material (For Example: See Figure 4); and

b) a second layer (46) comprising silicon nitride, located over the first layer, and including in-film particles (44) (For Example: See Figure 4).

In regards to claim 1, Applicant's Prior Art fails to disclose the following:

a) 1 ¼ in-film particles or surface roughness features per square millimeter of surface area.

However, the applicant has not established the critical nature of “1 ¼ in-film particles or surface roughness per square millimeter of surface area.” “The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims. . . . In such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range.” *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir.1990). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have various ranges.

In regards to claims 2 and 9, Applicant’s Prior Art discloses the following:

a) the anti-reflective material comprises silicon atoms and nitrogen atoms (For Example: See Paragraph 36).

In regards to claims 3 and 10, Applicant’s Prior Art discloses the following:

a) the anti-reflective material further comprises oxygen atoms (For Example: See Paragraph 36).

In regards to claims 4 and 11, Applicant’s Prior Art fails to disclose the following:

a) the anti-reflective material comprises $\text{Si}_x\text{O}_y\text{N}_z$ where x equals about 0.40 to about 0.65 times the sum of x, y, and z, y equals about 0.02 to about 0.56 times the sum of x, y, and z, and z equals about 0.05 to about 0.33 times the sum of x, y, and z.

However, the applicant has not established the critical nature of “the anti-reflective material comprises $\text{Si}_x\text{O}_y\text{N}_z$ where x equals about 0.40 to about 0.65 times the sum of x, y, and z, y equals about 0.02 to about 0.56 times the sum of x, y, and z, and z equals about 0.05 to about 0.33 times the sum of x, y, and z.” “The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims. . . . In such a situation, the applicant must show that the particular range is critical, generally by

Art Unit: 2822

showing that the claimed range achieves unexpected results relative to the prior art range.” *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir.1990). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have various ranges.

In regards to claims 5 and 12, Applicant’s Prior Art discloses the following:

a) a surface of said the first layer is substantially free of at least one of measurable particulates and surface roughness (For Example: See Figure 4).

In regards to claim 6, Applicant’s Prior Art fails to disclose the following:

a) the second layer includes at most about 1 1/4 of at least one of particles and surface roughness features of at least about 120 nm dimension per square millimeter of surface area.

However, the applicant has not established the critical nature of “the second layer includes at most about 1 1/4 of at least one of particles and surface roughness features of at least about 120 nm dimension per square millimeter of surface area.” “The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims. . . . In such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range.” *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir.1990). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have various ranges.

In regards to claims 7 and 14, Applicant’s Prior Art discloses the following:

a) the second layer is formed on the first layer (For Example: See Figure 4).

Finally, the following limitation makes it a product by process claim: a) “formed on.”

The MPEP § 2113, states, "Even though product -by[-] process claims are limited by and defined

Art Unit: 2822

by the process, determination of patentability is based upon the product itself. The patentability of a product does not depend on its method of production. If the product in product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product is made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985)(citations omitted).

A "*product by process*" claim is directed to the product per se, no matter how actually made, *In re Hirao and Sato et al.*, 190 USPQ 15 at 17 (CCPA 1976) (footnote 3). See also *In re Brown and Saffer*, 173 USPQ 685 (CCPA 1972); *In re Luck and Gainer*, 177 USPQ 523 (CCPA 1973); *In re Fessmann*, 180 USPQ 324 (CCPA 1974); and *In re Marosi et al.*, 218 USPQ 289 (CAFC 1983) final product per se which must be determined in a "*product by, all of*" claim, and not the patentability of the process, and that an old or obvious product, whether claimed in "*product by process*" claims or not. Note that Applicant has the burden of proof in such cases, as the above caselaw makes clear.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica Lewis whose telephone number is 571-272-1838.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-308-7722 for regular and after final

Art Unit: 2822

communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956

ML

September 2, 2004

A handwritten signature in black ink, appearing to be 'Mary Wilczewski', written in a cursive style.

Mary Wilczewski
Primary Examiner